

Attorney Docket No.: BDA-0038
Inventors: Roger S. Cubicciotti
Serial No.: 09/171,885
Filing Date: October 28, 1998
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In the claims:

✓
Please cancel pending claims 13-29, without prejudice.

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Please add the following new claims:

F! -- ~~30.~~ A method of producing and administering a prodrug complex comprising:

- (a) identifying a drug; ?
- (b) selecting by combinatorial selection a synthetic receptor that specifically binds the drug;
- (c) specifically binding the identified drug to the selected synthetic receptor to form a prodrug complex; and
- (d) administering the prodrug complex to an organism.

31. The method of claim 30 further comprising attaching the prodrug complex to a biologic or biocompatible structure.

~~32.~~ A method of producing and administering a prodrug complex comprising:

- (a) identifying a drug;
- (b) selecting by in vitro evolution a synthetic receptor that specifically binds the drug;

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(c) specifically binding the identified drug to the selected synthetic receptor to form a prodrug complex; and

(d) administering the prodrug complex to an organism.

33. The method of claim ~~32~~ further comprising attaching the prodrug complex to a biologic or biocompatible structure.

~~34.~~ A method of producing and administering a prodrug complex comprising:

(a) identifying a drug;

(b) selecting a synthetic receptor that specifically binds the drug via a saturable, noncovalent interaction between the drug and the synthetic receptor that can be competitively inhibited by structural analogs of the drug, said synthetic receptor being selected from the group consisting of antibodies, antibody fragments, oligonucleotides and oligosaccharides;

(c) specifically binding the identified drug to the selected synthetic receptor to form a prodrug complex; and

(d) administering the prodrug complex to an organism.

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~~35.~~ The method of claim ~~34~~ further comprising attaching the prodrug complex to a biologic or biocompatible structure.

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36. A method of producing a multi-prodrug complex for administration to an organism, said multi-prodrug complex comprising at least two prodrug complexes, wherein at least one of the prodrug complexes is produced and administered in accordance with the method of claim ~~30, 32 or 34~~ ³⁴.

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37. A prodrug complex for administration to an organism, said prodrug complex comprising a drug specifically bound to a synthetic receptor and being produced and administered in accordance with the method of claim ~~30, 32 or 34~~ ³⁴.

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38. A drug delivery system comprising the prodrug complex of claim ~~37~~ ⁴ attached to a biologic or biocompatible structure selected from the group consisting of molecules, molecular complexes, microstructures, cells, vesicles, microparticles, polymers, gels, matrices, blood forming elements, reticuloendothelial cells, liposomes, microspheres, nanostructures, biopolymers, multimolecular complexes, cell membranes, implants and prosthetic devices.

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39. A multi-prodrug complex for administration to an organism, said multi-prodrug complex comprising at least two prodrug

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complexes, wherein at least one of the prodrug complexes is produced and administered in accordance with the method of claim ~~30, 32 or 34~~.

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40. A drug delivery system comprising the multi-prodrug complex of claim ⁶~~39~~ attached to a biologic or biocompatible structure selected from the group consisting of molecules, molecular complexes, microstructures, cells, vesicles, microparticles, polymers, gels, matrices, blood forming elements, reticuloendothelial cells, liposomes, microspheres, nanostructures, biopolymers, multimolecular complexes, cell membranes, implants and prosthetic devices.

41. An immobilized prodrug complex comprising:
(a) a synthetic receptor;
(b) a drug specifically bound to the synthetic receptor via a saturable, noncovalent interaction between the drug and the synthetic receptor that can be competitively inhibited by structural analogs of the drug; and
(c) a biologic or biocompatible structure to which the synthetic receptor or drug is immobilized, wherein the biologic or biocompatible structure is selected from the group consisting of